

CLAIMS

What is claimed is:

1. An orthotic insole marketing and production system, comprising:
 - a receiver for receiving orthotic insole orders, each order comprising user information and scanned foot images;
 - a conversion utility for converting the scanned foot images into a three dimensional orthotic insole model;
 - a modeling utility for manipulating the three dimensional orthotic insole model;
 - a postprocessing utility for generating fabrication instructions from the manipulated orthotic insole model; and
 - a fabrication device that interprets the fabrication instructions to create a physical reproduction of the manipulated orthotic insole model;wherein the physical reproduction created by the fabrication device is subsequently delivered to the user for use as an orthotic insole.
2. The system of claim 1 wherein orthotic insole orders further comprise a prescription based on a diagnosis from a medical practitioner.
3. The system of claim 1 further comprising:
 - a foot scan software program executable by orthotic insole customers to collect order information and aid users in scanning foot images;wherein the foot scan software program creates and transmits orthotic insole orders to the system receiver.

4. The system of claim 3 wherein the foot scan software program packs all order information and scanned images into a single file prior to transmitting the orthotic insole order.

5. The system of claim 4 further comprising:

an unpack utility for extracting order information and scanned images from packed orthotic insole orders.

6. The system of claim 5 further comprising:

a production database for storing records of each orthotic insole customer;
wherein the unpack utility is further configured to submit order information and scanned images to the production database.

7. The system of claim 6 further comprising:

a public network accessible by customers, said network comprising information on ordering orthotic insoles and said network also providing access to the foot scan software.

8. The system of claim 7 wherein orthotic insole orders are transmitted by the foot scan software to the public network.

9. The system of claim 7 wherein orthotic insole orders are transmitted by the foot scan software to a private network within the orthotic insole production system.

10. A method of producing custom orthotic insoles, comprising:

receiving into a computer system an order for custom orthotic insoles; each order comprising scanned images of a patient's foot and instructions on customizing the orthotic insole;

converting the scanned images into three dimensional orthotic insole computer models;

adding features to the orthotic insole computer model according to the instructions for customizing the orthotic insole;

generating fabrication instructions for creating a physical replica of the orthotic insole computer model; and

fabricating a physical replica of the orthotic insole computer model using the fabrication instructions.

11. The method of claim 10 wherein the top surface of the orthotic insole computer model is created from the foot computer model.

12. The method of claim 11 wherein the instructions on customizing the orthotic insole are prescription instructions from a medical practitioner.

13. The method of claim 12 further comprising:

creating a patient record in a production database for each customer that has placed an order for custom orthotic insoles; and

storing all order information with the corresponding patient record;

wherein all order information is retrievable from the production database.

14. The method of claim 13 wherein patient record information within the production database is viewable using a production database explorer software program.

15. The method of claim 14 further comprising:

receiving data from a foot pressure measuring device reflecting pressure distributions on the foot of a customer ordering orthotic insoles;

overlaying pressure data onto the orthotic insole computer model;

adding features to the orthotic insole computer model to redistribute pressures on the customers foot.

16. The method of claim 14 further comprising:

receiving data from a medical imaging device reflecting the internal structure of the foot of a customer ordering orthotic insoles; ,

adding features to the orthotic insole computer model based on the data from the medical imaging device.

17. The method of claim 14 further comprising:

receiving data from a laser scanning device reflecting a 3D model of the foot of a customer ordering orthotic insoles;

adding features to the orthotic insole computer model based on the data from the laser scanning device.

18. A method of ordering custom orthotic insoles, comprising:

acquiring a computer image of a foot using an electro-optic scanner;
transmitting the image and custom fabrication instructions to an orthotic insole manufacturer;

wherein the image and custom fabrication instructions are used by the orthotic insole manufacturer to create a computer model of an orthotic insole from which custom orthotic insoles are manufactured.

19. The method of claim 18 further comprising:

downloading and executing a foot scan software program from the orthotic insole manufacturer;

inputting user information in response to queries from the foot scan software; and
acquiring computer foot images by following instructions from the foot scan software.

20. The method of claim 19 further comprising:

submitting the order for custom orthotic insoles from the foot scan software.

21. The method of claim 19 further comprising:

submitting the order for custom orthotic insoles by emailing an order file generated by the foot scan software to the orthotic insole manufacturer.

22. The method of claim 18 wherein the order is placed by the end user.

23. The method of claim 18 wherein the order is placed for the end user by an authorized practitioner.

24. The method of claim 23 wherein the authorized practitioner is a medical doctor and the custom fabrication instructions are in the form of a prescription generated in response to a medical diagnosis.

25. A method of ordering non-prescription, prefabricated insoles, comprising:
downloading foot sizing software from an insole provider network;
executing the foot sizing software to determine a correlated insole size to be used with a foot;
transmitting the correlated insole size to the insole provider;
wherein the correlated insole size is used by the insole provider to locate and deliver correctly sized orthotic insoles.

26. The method of claim 25 wherein the network is an internet website.

27. The method of claim 25 wherein the step of executing the foot sizing software to determine a correlated insole size to be used with a foot further comprises:
printing a diagram that includes a plurality of insoles sizes;
comparing a foot size to the plurality of insole sizes on the printed diagram; and
determining the insole size that most closely matches the foot size.

28. A method of producing a custom orthotic insole, comprising:

receiving into a computer system an order for a custom orthotic insole; each order comprising a scanned image of a customer's foot;

converting the scanned image into a three dimensional orthotic insole computer model;

generating fabrication instructions for creating a physical replica of the orthotic insole computer model; and

fabricating a physical replica of the orthotic insole computer model using the fabrication instructions.

29. The method of claim 28 further comprising:

receiving modification instructions with the order for a custom orthotic insole;

adding features to the orthotic insole computer model according to the modification instructions.

30. The method of claim 29 wherein the instructions on fabricating the orthotic insole are prescription instructions from a medical practitioner.

31. An orthotic insole marketing and production system, comprising:

a receiver for receiving orthotic insole orders, each order comprising user information and scanned foot images;

a conversion utility for converting the scanned foot images into a three dimensional orthotic insole model;

a postprocessing utility for generating fabrication instructions from the manipulated orthotic insole model; and

a fabrication device that interprets the fabrication instructions to create a physical reproduction of the orthotic insole model.

32. The system of claim 31 wherein the physical reproduction created by the fabrication device is subsequently delivered to the user for use as an orthotic insole.

33. The system of claim 32 further comprising a modeling utility for altering the three dimensional orthotic insole model.

34. The system of claim 33 wherein orthotic insole orders further comprise customization instructions.

35. The system of claim 34 wherein the customization instructions are prescriptions based on a diagnosis from a medical practitioner.

36. The system of claim 35 further comprising:

a foot scan software program executable by orthotic insole customers to collect order information and aid users in scanning foot images.

37. The system of claim 36 wherein the foot scan software program creates and transmits orthotic insole orders to the system receiver.

38. The system of claim 36 wherein the foot scan software creates and saves orthotic insole orders to a local memory device, and wherein said orders are subsequently submitted to the system receiver.